

Claims

[c1] 1. A data cartridge magazine for use in a magazine-based data cartridge library that is capable of transporting data cartridge magazines within the library, the data cartridge magazine comprising:

 a box structure with an interior space for accommodating a plurality of data cartridges;

 wherein said box structure comprises a bottom wall with a bottom wall interior surface and a bottom wall exterior surface;

 wherein said box structure comprises a side wall that is operatively attached to said bottom wall, extends from said bottom wall to a side wall terminal edge, and has a side wall interior surface and a side wall exterior surface;

 wherein said bottom wall interior surface and said side wall interior surface define said interior space;

 wherein said side wall terminal edge defines a top opening for the insertion/extraction of data cartridges into/from said interior space;

 a plurality of partitioning structures for dividing said interior space into a plurality of slots with each of said plurality of slots capable of accommodating a data cartridge; and

 a magazine transport means for being engaged by a portion of a magazine transport device that is associated with a magazine-based data cartridge library and used to displace a

data cartridge magazine towards and away from a storage location within a magazine-based data cartridge library.

- [c2] 2. A data cartridge magazine, as claimed in claim 1, wherein: said magazine transport means comprises a hole that is associated with one of said bottom wall and said side wall.
- [c3] 3. A data cartridge magazine, as claimed in claim 1, wherein: said magazine transport means comprises a protrusion that is associated with one of said bottom wall and said side wall.
- [c4] 4. A data cartridge magazine, as claimed in claim 1, wherein: said magazine transport means comprises an indentation that is associated with one of said bottom wall and said side wall.
- [c5] 5. A data cartridge magazine, as claimed in claim 1, wherein: said magazine transport means comprises a pair of holes, with each of said pair of holes associated with one of said bottom wall and said side wall.
- [c6] 6. A data cartridge magazine, as claimed in claim 1, wherein: said magazine transport means comprises a pair of protrusions, with each of said pair of protrusions associated with one of said bottom wall and said side wall.
- [c7] 7. A data cartridge magazine, as claimed in claim 1, wherein: said magazine transport means comprises a pair of indentations, with each of said pair of indentations associated

with one of said bottom wall and said side wall.

[c8] 8. A data cartridge magazine, as claimed in claim 1, further comprising:
an engaged/disengaged structure for use with a sensor that is used to determine if a magazine transport device associated with a magazine-based data cartridge library is engaged/disengaged to/from the data cartridge magazine.

[c9] 9. A data cartridge magazine, as claimed in claim 1, further comprising:
a magazine orientation structure for ensuring that the data cartridge magazine has a desired orientation within a magazine-based data cartridge library.

[c10] 10. A data cartridge magazine, as claimed in claim 9, wherein:
said magazine orientation structure comprises an asymmetric structure this is asymmetric relative to a plane that vertically bisects the data cartridge magazine.

[c11] 11. A data cartridge magazine, as claimed in claim 10,
wherein:
said asymmetric structure comprises a pair of parallel rails.

[c12] 12. A data cartridge magazine, as claimed in claim 1, further comprising:
a retaining structure for use in holding the data cartridge magazine in association with a shelf within a magazine-based

data cartridge library but releasing the data cartridge magazine when a force is applied to the data cartridge magazine by a magazine transport device associated with the magazine-based data cartridge library.

- [c13] 13. A data cartridge magazine, as claimed in claim 12, wherein:
said retaining structure comprises a notch for engaging a notch-engaging structure associated with a shelf.
- [c14] 14. A data cartridge magazine, as claimed in claim 12, wherein:
said retaining structure comprises a detent for use in engaging a notch associated with a shelf.
- [c15] 15. A data cartridge magazine, as claimed in claim 12, wherein:
said retaining structure comprises:
a detent for engaging a notch associated with a shelf; and
a spring for applying a force to said detent.
- [c16] 16. A data cartridge magazine, as claimed in claim 1, further comprising:
a data cartridge orientation structure associated with each of said slots to ensure that when a data cartridge is inserted into a slot, the data cartridge has a desired orientation.
- [c17] 17. A data cartridge magazine, as claimed in claim 1, further

comprising:

 a plurality of cartridges with each of said plurality of cartridges located in one of said plurality of slots.

[c18] 18. A data cartridge magazine, as claimed in claim 1, further comprising:

 label means for use in identifying the data cartridge magazine.

[c19] 19. A data cartridge magazine, as claimed in claim 18, wherein:

 said label means comprises an indentation in said side wall for accommodating a label for identifying the magazine.

[c20] 20. A data cartridge magazine, as claimed in claim 18, wherein:

 said label means comprises:

 a first indentation in said side wall exterior surface for accommodating a first label for identifying the magazine; and

 a second indentation in said side wall exterior surface for accommodating a second label for identifying the magazine.

[c21] 21. A data cartridge magazine, as claimed in claim 20, wherein:

 said side wall comprising a first wall and a second wall that is substantially parallel to said first wall;

 wherein said first indentation is located in said first wall; and

 wherein said second indentation is located on said second

wall.

[c22] 22. A data cartridge magazine, as claimed in claim 18, wherein:

 said label means comprises a sleeve for holding a label.

[c23] 23. A data cartridge magazine, as claimed in claim 18, wherein:

 said label means comprises a radio-frequency identifier.

[c24] 24. A data cartridge magazine, as claimed in claim 1, further comprising:

 a label that identifies the data cartridge magazine and is attached to said box structure at a location that is discernable by a label reader located within a magazine-based data cartridge library.

[c25] 25. A data cartridge magazine for use in a magazine-based data cartridge library that is capable of transporting data cartridge magazines within the library, the data cartridge magazine comprising:

 a frame structure that defines a space for accommodating a plurality of data cartridges;

 a partitioning structure for dividing said space into a plurality of slots with each of said plurality of slots being capable of accommodating a data cartridge and orienting the data cartridge such that a face of the data cartridge with the

greatest surface area lies in a vertical plane when the magazine is operatively situated in a magazine-based data cartridge library; and

a magazine transport means for being engaged by a portion of a magazine transport device associated with a magazine-based data cartridge library and used to displace a data cartridge magazine towards or away from a shelf within the magazine-based data cartridge library.

[c26] 26. A data cartridge magazine, as claimed in claim 25, wherein:

 said frame structure comprises:

 a first pair of parallel side surfaces; and

 a second pair of parallel side surfaces that are perpendicular to said first pair of parallel side surfaces.

[c27] 27. A data cartridge magazine, as claimed in claim 25, wherein:

 said frame structure comprises:

 a first pair of parallel side surfaces;

 a top surface that is perpendicular to said first pair of parallel side surfaces; and

 a bottom surface that is perpendicular to said first pair of parallel side surfaces.

[c28] 28. A data cartridge magazine, as claimed in claim 25, wherein:

said magazine transport means comprises a hole that is associated with said frame structure.

[c29] 29. A data cartridge magazine, as claimed in claim 25, wherein:
 said magazine transport means comprises a protrusion that is associated with said frame structure.

[c30] 30. A data cartridge magazine, as claimed in claim 25, wherein:
 said magazine transport means comprises an indentation that is associated with said frame structure.

[c31] 31. A data cartridge magazine, as claimed in claim 25, wherein:
 said magazine transport means comprises a pair of holes that are associated with said frame structure.

[c32] 32. A data cartridge magazine, as claimed in claim 25, wherein:
 said magazine transport means comprises a pair of protrusions that are associated with said frame structure.

[c33] 33. A data cartridge magazine, as claimed in claim 25, wherein:
 said magazine transport means comprises a pair of indentations that are associated with said frame structure.

[c34] 34. A data cartridge magazine, as claimed in claim 25, further comprising:
an engaged/disengaged structure for use with a sensor that is used to determine if a magazine transport device associated with a magazine-based data cartridge library is engaged/disengaged to/from the data cartridge magazine.

[c35] 35. A data cartridge magazine, as claimed in claim 25, further comprising:
a magazine orientation structure for ensuring that the data cartridge magazine has a desired orientation within a magazine-based data cartridge library.

[c36] 36. A data cartridge magazine, as claimed in claim 35, wherein:
said magazine orientation structure comprises an asymmetric structure this is asymmetric relative to a plane that vertically bisects the data cartridge magazine.

[c37] 37. A data cartridge magazine, as claimed in claim 36, wherein:
said asymmetric structure comprises a pair of parallel rails.

[c38] 38. A data cartridge magazine, as claimed in claim 25, further comprising:
a retaining structure for use in holding said data cartridge magazine in association with a shelf within a magazine-based

data cartridge library but releasing the data cartridge magazine when a force is applied to the data cartridge magazine by a magazine transport device associated with the magazine-based data cartridge library.

- [c39] 39. A data cartridge magazine, as claimed in claim 38, wherein:
said retaining structure comprises a notch for engaging a notch-engaging structure associated with a shelf.
- [c40] 40. A data cartridge magazine, as claimed in claim 38, wherein:
said retaining structure comprises a detent for use in engaging a notch associated with a shelf.
- [c41] 41. A data cartridge magazine, as claimed in claim 38, wherein:
said retaining structure comprises:
a detent for engaging a notch associated with a shelf; and
a spring for applying a force to said detent.
- [c42] 42. A data cartridge magazine, as claimed in claim 25, further comprising:
a data cartridge orientation structure associated with each of said slots to ensure that when a data cartridge is inserted in a slot, the data cartridge is in a predetermined orientation.
- [c43] 43. A data cartridge magazine, as claimed in claim 25, further

comprising:

a plurality of cartridges with each of said plurality of cartridges located in one of said plurality of slots.

[c44] 44. A data cartridge magazine, as claimed in claim 25, further comprising:

label means for use in identifying the data cartridge magazine.

[c45] 45. A data cartridge magazine, as claimed in claim 44, wherein:

said label means comprises an indentation located in a portion of said frame structure that would be considered a side wall when the data cartridge magazine has an operational orientation with respect to a shelf within a magazine-based data cartridge library, wherein said indentation is for accommodating a label for identifying the magazine.

[c46] 46. A data cartridge magazine, as claimed in claim 44, wherein:

said label means comprises:

a first indentation located in a first portion of said frame structure; and

a second indentation in a second portion of said frame structure that is separated from said first portion;

wherein said first indentation is for accommodating a first label for identifying the magazine;

wherein said second indentation is for accommodating a

second label for identifying the magazine;
wherein said first and second portions are each located on a
section of said frame structure that would be considered a side
wall when the data cartridge magazine has an operational
orientation with respect to a shelf within a magazine-based
data cartridge library system.

[c47] 47. A data cartridge magazine, as claimed in claim 46,
wherein:
said first portion being located on a first side wall; and
said second portion being located on a second side wall that is
parallel to said first side wall.

[c48] 48. A data cartridge magazine, as claimed in claim 44,
wherein:
said label means comprises a sleeve for holding a label.

[c49] 49. A data cartridge magazine, as claimed in claim 44,
wherein:
said label means comprises a radio-frequency identifier.

[c50] 50. A data cartridge magazine, as claimed in claim 25, further
comprising:
a label that identifies the data cartridge magazine and is
attached to said frame structure at a location that is
discernable by a label reader located within a magazine-based
data cartridge library.